

REMARKS

Claims 39, 40, 53, 54, 67, 68, 81, 82, 95 and 96 were rejected by the Examiner under 35 USC 102(b). The Examiner objected to Claims 41-42, 55-66, 69-80, 83-94 and 97-104 as depending upon a rejected base claim, but indicated that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Amendments consistent with this requirement have been provided in Claims 41-44, 46-48, 50, 55-58, 60-62, 64, 69-72, 74-76, 78, 83-86, 88-90, 92, 97, 99, 101 and 103, thereby converting these claims to independent form to include the limitations of the base claim, in each instance. Claim 94 has been amended to correct its dependency. Claims 39, 40, 53, 54, 67, 68, 81, 82, 95 and 96 have been canceled, however, Applicant reserves the right to present these claims in continuing applications.

For the foregoing reasons, it is respectfully submitted that all of the Examiner's objections have been overcome and that the application is in condition for allowance. Hence, allowance of these claims and passage to issue of the application are solicited.

If the Examiner has any questions concerning this case, the Examiner is respectfully requested to contact me at the number set out below.

Respectfully submitted,

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SUPPLEMENT A

A marked-up copy of amended Claims 41-44, 46-48, 50, 55-58, 60-62, 64, 69-72, 74-76, 78, 83-86, 88-90, 92, 97, 99, 101 and 103 is provided immediately hereinafter.

41. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a [The] monitoring arrangement [of Claim 39 wherein] comprising:

a detection arrangement at said drill rig for monitoring at least one operational parameter to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool;

a portable device configured for receiving the data signal relating to the operational parameter for use by the portable device and said portable device includes a display arrangement configured for using the data signal for display to an operator of the portable device; and

a communication arrangement for transferring the data signal from the drill rig to the portable device.

42. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore [The monitoring arrangement of claim 39 wherein] said boring tool including a locating signal transmitter which transmits a locating signal for locating an underground position of the boring tool, a monitoring arrangement comprising:

a detection arrangement at said drill rig for monitoring at least one operational parameter to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool;

a portable device configured for receiving the data signal relating to the operational parameter for use by the portable device and said portable device including a locating section for receiving the locating signal for use in identifying the underground position of the boring tool; and

a communication arrangement for transferring the data signal from the drill rig to the portable device.

43. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore and [The monitoring arrangement of claim 39 wherein] said drilling system includes a drill string extending from the drill rig to the boring tool configured for receiving a push force applied by the drill rig to move the boring tool in a forward direction, a monitoring arrangement comprising:

a detection arrangement at said drill rig for monitoring at least one operational parameter to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool;

a portable device configured for receiving the data signal relating to the operational parameter for use by the portable device;

a communication arrangement for transferring the data signal from the drill rig to the portable device; and

[wherein said monitoring arrangement includes] a push force sensing arrangement which generates a push force signal for inclusion as at least a portion of said data signal.

44. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool

which is configured for moving through the ground under control of the drill rig to form an underground bore, a monitoring arrangement comprising:

a detection arrangement at said drill rig for monitoring at least one operational parameter to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and [The monitoring arrangement of claim 39] wherein said operational parameter is capable of violating at least a selected one of a minimum and a maximum predetermined value;

a portable device configured for receiving the data signal relating to the operational parameter for use by the portable device; and

a communication arrangement for transferring the data signal from the drill rig to the portable device and wherein said communication arrangement is configured for transferring, as part of said data signal, a warning to said portable device that the selected predetermined value has been violated.

46. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a monitoring arrangement comprising:

a detection arrangement at said drill rig for monitoring at least one operational parameter to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and [The monitoring arrangement of claim 39 wherein] said operational parameter is capable of violating at least a selected one of a minimum and a maximum predetermined value;

a portable device configured for receiving the data signal relating to the operational parameter for use by the portable device and wherein said portable device is configured for issuing a warning that the selected predetermined value has been violated; and

a communication arrangement for transferring the data signal from the drill rig to the portable device.

47. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a monitoring arrangement comprising:

a detection arrangement at said drill rig for monitoring at least one operational parameter to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and [The monitoring arrangement of claim 39 wherein] said operational parameter is a push force with which the boring tool is being pushed forward by the drill rig such that a maximum push value is established beyond which the boring tool may be damaged, said detection arrangement producing the data signal responsive to exceeding the maximum push value;

a portable device configured for receiving the data signal relating to the operational parameter for use by the portable device and [wherein said portable device is] further configured to provide an indication of violation of the maximum push value when the maximum push value is exceeded; and

a communication arrangement for transferring the data signal from the drill rig to the portable device.

48. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore and [The monitoring arrangement of claim 39 wherein] said boring tool uses drilling mud provided from said drill rig, a monitoring

arrangement comprising:

a detection arrangement at said drill rig for monitoring at least one operational parameter to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and wherein said operational parameter is a status of the drilling mud for inclusion as at least a portion of said data signal;

a portable device configured for receiving the data signal relating to the operational parameter for use by the portable device; and

a communication arrangement for transferring the data signal from the drill rig to the portable device.

50. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore and [The monitoring arrangement of claim 39 wherein] said boring tool is attached to and moved by a drill string having one minimum bend radius and extending from the drill rig and a utility to be installed includes another minimum bend radius, a monitoring arrangement comprising:

a detection arrangement at said drill rig for monitoring at least one operational parameter to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and wherein said detection arrangement at the drill rig includes a drill path monitoring arrangement for monitoring curvature of the underground bore being formed by the boring tool as said operational parameter and for comparing at least a selected one of the minimum bend radius of the drill string and the minimum bend radius of the utility with the curvature of the underground bore to form at least a portion of said data signal;

a portable device configured for receiving the data signal relating to the operational parameter for use by the portable device; and

a communication arrangement for transferring the data signal from the drill rig to the portable device.

55. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a method comprising the steps of:

monitoring at least one operational parameter using a detection arrangement at said drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool;

transferring the data signal, relating to the operational parameter, to a portable device for use by the portable device which [The method of Claim 53 wherein the portable device] includes a display arrangement; and

[said method includes the step of] using the data signal for a display presentation to an operator of the portable device.

56. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore and [The method of claim 53 wherein] said boring tool includes a locating signal transmitter which transmits a locating signal for locating an underground position of the boring tool, a method comprising the steps of:

monitoring at least one operational parameter using a detection arrangement at said drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool;

transferring the data signal, relating to the operational parameter, to a portable device for use by the portable device;
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and

[wherein said method includes the step of] configuring the portable device for receiving the locating signal for use in identifying the underground position of the boring tool.

57. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore and [The method of claim 53 wherein] said drilling system includes a drill string extending from the drill rig to the boring tool configured for receiving a push force applied by the drill rig to move the boring tool in a forward direction, a method comprising the steps of:

monitoring at least one operational parameter using a detection arrangement at said drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and [wherein said monitoring step includes the step of] sensing the push force to generate a push force signal for inclusion as at least a portion of said data signal; and

transferring the data signal, relating to the operational parameter, to a portable device for use by the portable device.

58. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a method comprising the steps of:

monitoring at least one operational parameter using a detection arrangement at said drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and [The method of claim 53 wherein] said operational parameter is capable of violating at least a selected one of a minimum and a maximum predetermined value;

transferring the data signal, relating to the operational parameter, to a portable device for use by the portable device and [wherein said transferring step includes the step of] sending, as at least a portion of said data signal, a warning to said portable device that the selected predetermined value has been violated.

60. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a method comprising the steps of:

monitoring at least one operational parameter using a detection arrangement at said drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and [The method of claim 53 wherein] said operational parameter is capable of violating at least a selected one of a minimum and a maximum predetermined value ;

transferring the data signal, relating to the operational parameter, to a portable device for use by the portable device; and

[said method further comprising the step of] issuing a warning, using said portable device, that the selected predetermined value has been violated.

61. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a method

comprising the steps of:

monitoring at least one operational parameter using a detection arrangement at said drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and [The method of claim 53 wherein] said operational parameter is a push force with which the boring tool is being pushed forward by the drill rig such that a maximum push value is established beyond which the boring tool will be damaged; and

transferring the data signal, relating to the operational parameter, to a portable device for use by the portable device [wherein said monitoring step monitors the push force as said operational parameter and said transferring step sends said data signal to the portable device] responsive to violation of the maximum push value when the maximum push value is exceeded.

62. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore and [The method of claim 53 wherein] said boring tool uses drilling mud provided from said drill rig, a method comprising the steps of:

monitoring at least one operational parameter using a detection arrangement at said drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool as [and wherein said monitoring step monitors] a status of the drilling mud for inclusion as at least a portion of said data signal; and

transferring the data signal, relating to the operational parameter, to a portable device for use by the portable device.

64. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore and [The method of claim 53 wherein] said boring tool is attached to and moved by a drill string having one minimum bend radius and extending from the drill rig and a utility to be installed includes another minimum bend radius, a method comprising the steps of:

monitoring at least one operational parameter using a detection arrangement at said drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool as [and wherein said monitoring step monitors] curvature of the underground bore being formed by the boring tool [as said operational parameter];

transferring the data signal, relating to the operational parameter, to a portable device for use by the portable device; and

[said method further comprises the step of] comparing at least a selected one of the minimum bend radius of the drill string and the minimum bend radius of the utility with the curvature of the underground bore to form at least a portion of said data signal.

69. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a monitoring arrangement comprising:

a detection arrangement for monitoring at least one operational parameter which is at least measurable at the drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool;

a portable device configured for receiving the data signal relating to the operational parameter for use by the

portable device and which [The monitoring arrangement of Claim 67 wherein the portable device] includes a display arrangement configured for using the data signal for display to an operator of the portable device; and
a communication arrangement for transferring the data signal from the detection arrangement to the portable device.

70. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore and [The monitoring arrangement of claim 67 wherein] said boring tool includes a locating signal transmitter which transmits a locating signal for locating an underground position of the boring tool, a monitoring arrangement comprising:

a detection arrangement for monitoring at least one operational parameter which is at least measurable at the drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool;

a portable device configured for receiving the data signal relating to the operational parameter for use by the portable device and which [wherein said portable device] includes a locating section for receiving the locating signal for use in identifying the underground position of the boring tool; and

a communication arrangement for transferring the data signal from the detection arrangement to the portable device.

71. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore and [The monitoring arrangement of claim 67 wherein] said drilling system includes a drill string extending from the drill rig to the boring tool configured for receiving a push force applied by the drill rig to move the boring tool in a forward direction, a monitoring arrangement comprising:

a detection arrangement for monitoring at least one operational parameter which is at least measurable at the drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and [wherein said monitoring arrangement includes a push force sensing arrangement] which generates a push force signal for inclusion as at least a portion of said data signal;

a portable device configured for receiving the data signal relating to the operational parameter for use by the portable device; and

a communication arrangement for transferring the data signal from the detection arrangement to the portable device.

72. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a monitoring arrangement comprising:

a detection arrangement for monitoring at least one operational parameter which is at least measurable at the drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and [The monitoring arrangement of claim 67 wherein] said operational parameter is capable of violating at least a selected one of a minimum and maximum predetermined value;

a portable device configured for receiving the data signal relating to the operational parameter for use by the portable device; and

a communication arrangement for transferring the data signal from the detection arrangement to the portable device and [wherein said communication arrangement is] configured for transferring, as part of said data signal, a warning to said DCI-15C2

portable device that said predetermined value has been violated.

74. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a monitoring arrangement comprising:

a detection arrangement for monitoring at least one operational parameter which is at least measurable at the drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and [The monitoring arrangement of claim 67 wherein] said operational parameter is capable of violating at least a selected one of a minimum and maximum predetermined value;

a portable device configured for receiving the data signal relating to the operational parameter for use by the portable device and [wherein said portable device is] configured for issuing a warning that the selected predetermined value has been violated; and

a communication arrangement for transferring the data signal from the detection arrangement to the portable device.

75. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a monitoring arrangement comprising:

a detection arrangement for monitoring at least one operational parameter which is at least measurable at the drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and [The monitoring arrangement of claim 67 wherein] said operational parameter is a push force with which the boring tool is being pushed forward by the drill rig such that a maximum push value is established beyond which the boring tool may be damaged, said detection arrangement producing the data signal responsive to exceeding the maximum push value;

a portable device configured for receiving the data signal relating to the operational parameter for use by the portable device and [wherein said portable device is] configured to provide an indication of violation of the maximum push value when the maximum push value is exceeded; and

a communication arrangement for transferring the data signal from the detection arrangement to the portable device.

76. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore and [The monitoring arrangement of claim 67 wherein] said boring tool uses drilling mud provided from said drill rig, a monitoring arrangement comprising:

a detection arrangement for monitoring at least one operational parameter which is at least measurable at the drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and wherein said operational parameter is a status of the drilling mud for inclusion as at least a portion of said data signal;

a portable device configured for receiving the data signal relating to the operational parameter for use by the portable device; and

a communication arrangement for transferring the data signal from the detection arrangement to the portable device.

78. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore and [The monitoring arrangement of claim 67 wherein] said boring tool is attached to and moved by a drill string having one minimum bend radius and extending from the drill rig and a utility to be installed includes another minimum bend radius, a monitoring arrangement comprising:

a detection arrangement for monitoring at least one operational parameter which is at least measurable at the drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and which [wherein said] detection arrangement at the drill rig includes a drill path monitoring arrangement for monitoring curvature of the underground bore being formed by the boring tool as said operational parameter and for comparing at least a selected one of the minimum bend radius of the drill string and the minimum bend radius of the utility with the curvature of the underground bore to form at least a portion of said data signal;

a portable device configured for receiving the data signal relating to the operational parameter for use by the portable device; and

a communication arrangement for transferring the data signal from the detection arrangement to the portable device.

83. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a method comprising the steps of:

monitoring at least one operational parameter which is at least measurable at said drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool; and

transferring the data signal, relating to the operational parameter, to a portable device for use by the portable device, which [The method of Claim 81 wherein the portable device] includes a display arrangement; and

[said method includes the step of] using the data signal for a display presentation to an operator of the portable device.

84. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore and [The method of claim 81 wherein] said boring tool includes a locating signal transmitter which transmits a locating signal for locating an underground position of the boring tool, a method comprising the steps of:

monitoring at least one operational parameter which is at least measurable at said drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool;

transferring the data signal, relating to the operational parameter, to a portable device for use by the portable device; and

[wherein said method includes the step of] configuring the portable device for receiving the locating signal for use in identifying the underground position of the boring tool.

85. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore and [The method of claim 81 wherein] said drilling system includes a drill string extending from the drill rig to the boring tool configured for receiving a push force applied by the drill rig to move the boring tool in a forward direction, a method

comprising the steps of:

monitoring at least one operational parameter which is at least measurable at said drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and [wherein said monitoring step includes the step of] for sensing the push force to generate a push force signal for inclusion as at least a portion of said data signal; and

transferring the data signal, relating to the operational parameter, to a portable device for use by the portable device.

86. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a method comprising the steps of:

monitoring at least one operational parameter which is at least measurable at said drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and [The method of claim 81 wherein] said operational parameter is capable of violating a minimum or maximum predetermined value; and

transferring the data signal, relating to the operational parameter, to a portable device for use by the portable device and [wherein said transferring step includes the step of] sending, as at least a portion of said data signal, a warning to said portable device that said predetermined value has been violated.

88. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a method comprising the steps of:

monitoring at least one operational parameter which is at least measurable at said drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and [The method of claim 81 wherein] said operational parameter is capable of violating a minimum or maximum predetermined value; and

transferring the data signal, relating to the operational parameter, to a portable device for use by the portable device; and

[said method further comprising the step of] issuing a warning, using said portable device, that the selected predetermined value has been violated.

89. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a method comprising the steps of:

monitoring at least one operational parameter which is at least measurable at said drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and [The method of claim 81 wherein] said operational parameter is a push force with which the boring tool is being pushed forward by the drill rig such that a maximum push value is established beyond which the boring tool will be damaged; and

transferring the data signal, relating to the operational parameter, to a portable device for use by the portable device [and said transferring step sends said data signal to the portable device] responsive to violation of the maximum push value when the maximum push value is exceeded.

90. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool

which is configured for moving through the ground under control of the drill rig to form an underground bore and [The method of claim 81 wherein] said boring tool uses drilling mud provided from said drill rig, a method comprising the steps of:

monitoring at least one operational parameter which is at least measurable at said drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool as [and wherein said monitoring step monitors] a status of the drilling mud for inclusion as at least a portion of said data signal; and
transferring the data signal, relating to the operational parameter, to a portable device for use by the portable device.

92. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore and [The method of claim 81 wherein] said boring tool is attached to and moved by a drill string having one minimum bend radius and extending from the drill rig and a utility to be installed includes another minimum bend radius, a method comprising the steps of:

monitoring at least one operational parameter which is at least measurable at said drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool as [and wherein said monitoring step monitors] curvature of the underground bore being formed by the boring tool [as said operational parameter];

[and said method further comprises the step of] comparing at least a selected one of the minimum bend radius of the drill string and the minimum bend radius of the utility with the curvature of the underground bore to form at least a portion of said data signal; and

transferring the data signal, relating to the operational parameter, to a portable device for use by the portable device.

94. (once amended) The method of claim [81] 93 including the steps of selecting the minimum bend radius as a greater one of the minimum bend radius of the drill string and the minimum bend radius of the utility and configuring the portable device to provide an indication of violation of the greater minimum bend radius.

97. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a monitoring arrangement comprising:

a detection arrangement at said drill rig for monitoring at least one operational parameter to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and [The monitoring arrangement of Claim 39 wherein] said detection arrangement is configured for detecting a range of the operational parameter for which an out of range condition of the operational parameter can result in a catastrophic equipment failure;

a portable device configured for receiving the data signal relating to the operational parameter for use by the portable device; and

a communication arrangement for transferring the data signal from the drill rig to the portable device.

99. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a method

comprising the steps of:

monitoring at least one operational parameter using a detection arrangement at said drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool to detect [The method of Claim 53 wherein said monitoring step includes the steps of configuring the detection arrangement for detecting] a range of the operational parameter for which an out of range condition of the operational parameter can result in a catastrophic equipment failure; and

transferring the data signal, relating to the operational parameter, to a portable device for use by the portable device.

101. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a monitoring arrangement comprising:

a detection arrangement for monitoring at least one operational parameter which is at least measurable at the drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool and [The monitoring arrangement of Claim 67 wherein said detection arrangement is] configured for detecting a range of the operational parameter for which an out of range condition of the operational parameter can result in a catastrophic equipment failure;

a portable device configured for receiving the data signal relating to the operational parameter for use by the portable device; and

a communication arrangement for transferring the data signal from the detection arrangement to the portable device.

103. (once amended) In a drilling system for performing underground boring including a drill rig and a boring tool which is configured for moving through the ground under control of the drill rig to form an underground bore, a method comprising the steps of:

monitoring at least one operational parameter which is at least measurable at said drill rig to produce a data signal relating to at least one of a utility to be installed in the underground bore, the drill rig and the boring tool [The method of Claim 81 wherein said monitoring step includes the steps of configuring the detection arrangement] for detecting a range of the operational parameter for which an out of range condition of the operational parameter can result in a catastrophic equipment failure; and

transferring the data signal, relating to the operational parameter, to a portable device for use by the portable device.